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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|------------------------------------------------------------------------------------------------------------------------|-------------|----------------------|---------------------------------|-----------------------------|
| 10/563,450 | 04/14/2006 | Adolf Kuehnle | 283349US0PCT | 8096 |
| 22850 7590 07/30/2007 OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314 | | | EXAMINER PATEL, REEMA | |
| | | | ART UNIT 2812 | PAPER NUMBER |
| | | | NOTIFICATION DATE 07/30/2007 | DELIVERY MODE ELECTRONIC |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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TH

Office Action Summary

Application No.

10/563,450

Applicant(s)

KUEHNLE ET AL.

Examiner

Reema Patel

Art Unit

2812

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>4/3/06, 9/11/06</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

2. The information disclosure statements (IDS) were submitted on 4/3/06 and 9/11/06. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statements have been considered by the examiner.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1, 3, and 8-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Huang et al. ("Structure and Interaction of Organic/Inorganic Hybrid Nanocomposites for Microelectronic Applications").

5. Regarding claim 1, Huang et al. discloses a process for producing low-k dielectric films which comprises using incompletely condensed polyhedral oligomeric silsesquioxanes of the formula $[R_aX_bSiO_{1.5})_m(R_cY_dSiO)_n]$ (Figure 1(a)).

6. Regarding claim 3, Huang et al. discloses the incompletely condensed polyhedral oligomeric silsesquioxane contains not more than three hydroxyl groups as type Y substituents (Figure 1(a)).

7. Regarding claim 8-11, Huang et al. discloses the low-k dielectric film is produced by means of spin coating and subsequent calcining (page 3679, col 1, lines 13-22; page 3678, col 1, lines 1-6) and has a k value of less than or equal to 2.3 (page 3682, col 2, lines 30-33).

8. Claims 1-7 are rejected under 35 U.S.C. 102(e) as being anticipated by Jost et al. (U.S. 2005/0010012 A1).

9. Regarding claim 1, Jost et al. discloses a process for producing low-k dielectric films ([0031]-[0032]; [0014]) which comprises using incompletely condensed polyhedral oligomeric silsesquioxanes of the formula $[(R_aX_bSiO_{1.5})_m(R_cY_dSiO)_n]$ ([0015]-[0016]).

10. Regarding claim 2, Jost et al. discloses using incompletely condensed polyhedral oligomeric silsesquioxanes of the formula $[(R_aSiO_{1.5})_m(R_cY_dSiO)_n]$ ([0015]-[0016]).

11. Regarding claim 3, Jost et al. the incompletely condensed polyhedral oligomeric silsesquioxane contains not more than three hydroxyl groups as type Y substituents ([0015]).

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12. Regarding claims 4-5, Jost et al. discloses the incompletely condensed polyhedral oligomeric silsesquioxanes are reacted with a tetralkoxysilanes ([0016]-[0018]).

13. Regarding claims 6-7, Jost et al. discloses the molar ratio of the incompletely condensed polyhedral oligomeric silsesquioxanes to the coreactant capable of hydrolytic condensation is 2:1 ([0021]).

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Jost et al. (WO 03/042223 A1) and Lichtenhan et al. (2003/0055193 A1) disclose condensing incompletely condensed polyhedral oligomeric silsesquioxanes.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Reema Patel whose telephone number is 571-270-1436. The examiner can normally be reached on M-F, 8:00-4:30 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Lebentritt can be reached on 571-272-1873. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

RSP
7/19/07

SCOTT B. GEYER
PRIMARY EXAMINER

SBG 7/23/07